We claim:

1. An apparatus, comprising:

a jet mill for the comminuation of powdery materials, comprising;

a pressure-resistant pulverizing inner casing, the inner casing for being contained in a pressurized outer casing, the inner casing having abrasion resistant inner surfaces, the inner casing having at least one inlet port for introducing a powdery material into the inner casing, the inner casing having at least one outlet port for extracting the comminuated powdery material from the inner casing, the inner casing having at least one inlet port for introducing a propellant fluid into the inner casing, the propellant fluid introduced from a pressurized fluid filled volume contained between an inner surface of the outer casing and the outer surface of the inner casing.

2. The apparatus of claim 1, further comprising the outer casing.

3. The apparatus of claim 2, wherein the outer casing operatively compresses the inner casing over at least one area, and wherein at least one vent is placed in the outer casing in the at least one area.

4. The apparatus of claim 3, wherein an equalizing film is inserted between the outer casing and the inner casing casing over the at least one area.

5. The apparatus of claim 2, wherein the inner casing comprises four parts.

6. The apparatus of claim 5, wherein each part of the inner casing is made of a single abrasion-resistant material.

7. The apparatus of claim 5, wherein parts of the inner casing are made from different abrasion-resistant materials.

8. The apparatus of claim 5, wherein the abrasion resistant inner surface is smooth

9. The apparatus of claim 5, wherein the abrasion resistant inner surface is textured.

10. The apparatus of claim 1, wherein the abrasion resistant inner surfaces are chosen from a group consisting of hard metals, carbides, borides, nitrides, and ceramic materials.

11. The apparatus of claim 10, wherein the inner casing comprises four parts.

12. The apparatus of claim 11, wherein each part of the inner casing is made of a single abrasion-resistant material.

13. The apparatus of claim 11, wherein parts of the inner casing are made from different abrasion-resistant materials.

14. The apparatus of claim 1, wherein the propellant fluid is air.

15. The apparatus of claim 1, wherein the propellant fluid is nitrogen.

16. The apparatus of claim 1, wherein the propellant fluid is steam.

17. The apparatus of claim 1, wherein the abrasion resistant inner surface is smooth.

18. The apparatus of claim 1, wherein the abrasion resistant inner surface is textured

19. The apparatus of claim 1, wherein the inner casing comprises four parts.

20. The apparatus of claim 19, wherein each part of the inner casing is made of a single abrasion-resistant material.

21. The apparatus of claim 19, wherein parts of the inner casing are made from different abrasion-resistant materials.

22. A method for comminuation of a powdery material, comprising;

a) introducing the powdery material through at least one inlet port of a pressure-resistant pulverizing inner casing, the inner casing contained in a pressurized outer casing, the inner casing having abrasion resistant inner surfaces, the inner casing having at least one inlet port for introducing a powdery material into the inner casing,

b) introducing a propellant fluid into the inner casing through at least one inlet port, the propellant fluid introduced from a pressurized fluid filled volume contained between an inner surface of the outer casing and the outer surface of the inner casing, the propellant fluid propelling the powdery material around the inside of the inner casing; and

c)extracting the comminuated powdery material from the inner casing through at least one outlet port

23. The method of claim 22, wherein the powdery material is titanium dioxide pigment material.

24. The method of claim 22, wherein the powdery material is chosen from the group consisting of pigments, dyes, inorganic oxides, metal oxides, toners, mineral

extenders, mineral fillers, carbonates, chalks, talcum, detergents, foods, fertilizers, herbicides, pesticides, insecticides, fungicides and sewage sludge.

25. The method of claim 22, wherein the inner surfaces of the inner chamber are smooth.

26. The method of claim 22, wherein the inner surfaces of the inner chamber are textured.